Amendments to the Specification:

Please replace paragraph [0071] with the following amended paragraph:

[0071] The timing of the loading is achieved by maintaining a current count in a local counter 53 illustrated in FIG. 3, which is typically implemented in software. In one embodiment, the local counter 53 is set to an initial value. The local counter 53 can be set in a variety of ways, including loading the counter with the initial value or calculating the initial value locally based on the processing element's location in the matrix (or array) and the function being performed on the data. Thereafter, at certain points in the shifting process, the counter is decremented. For example, the counter may be decremented once for each shift that occurs, or may be decremented once per n clock cycles where n clock cycles equals one shift. As stated, the initial value of the counter depends on its position in the matrix or array and is given by the general function f (Row_Index, Col_Index), where the exact form of f( ) will depend on the particular array manipulation required. When the counter reaches a non-positive value (i.e., zero or negative) the PE selects the data to be loaded into the output matrix.